BAUG CIO

THE NEWSLETTER OF THE BAY AREA ATARI USERS GROUP SEPTEMBER 1982

From the
PRESIDENT

CLUB NEWS

I suppose that the most important clubnews is that we need a new slate of officers. I am resigning as president, as soon as we can get a replacement, we need a BBS sysop, a new CIO newsletter editor, and a new disk librarian, so at the October meeting we will be accepting nominations for the new slate of officers. We must wait 'til then as the by-laws require notification by mail 30 days prior to this.

These shifts in officers are necessitated by many different problems experienced by several different folks. Mostly I think the difficulty is that we keep trying to do too many things at once, and end up not doing any of them as well as we want to. My advice to any of you who would like to get involved is to jump right in, its fun, but pick the ONE area you are really interested in and resist the urge to get involved in everything.

The modem order will have been placed by the time you read this. Hopefully we will have them by the meeting on the 13th. On the other items people have told me they are interested in, I never would have dreamed that there were so many suppliers as there are. Steve Shaw, of Horizon Systems, is researching all of the items, but as they are a low profit item, we are low priority. We do have the 1200 baud Hayes Smartmodem, which retaills for $699, that we got thru' Horizon, for $527, including tax, operating on the CIO BBS now.

September Meetings

The first of the month meeting is being postponed to the second Monday, as the first Monday is Labor Day. This makes it the 13th, at Dysan, 5201 Patrick Henry Drive, @ 7PM. The mid-month meeting will be at The Software Emporium at 1800 South Bascom Ave. on Sept. 21 @ 7PM.

The Speakers at the Dysan meeting will be Steve Switzer of Electronic Fantasy, speaking on Equipment care and Maintenance, and Ted Kahn of Atari, speaking on the Atari Institute, Atari's educational support group.

DAVE FLORY

C I O
BAY AREA ATARI USERS GROUP
NEWSLETTER

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Deadline

Newsletter submissions must be in by the third Tuesday of each month. If material submitted is not of a time dated nature, it may not be published immediately. Publication decisions are at the discretion of the Editorial Staff.

Please submit articles camera ready, typed or printed in 3 1/2 inch columns, or as ATASCII/ASCII file on cassette or tape (media returned, if SASE is included). Articles may also be uploaded to T.A.B.B.S. after requesting password from SYSOP. Please, leave message including filename for the editor. Mail hard copy to the EDITOR, BAUG CIO

Subscriptions (which include Group membership) are $12 per year. Persons, who sign up after June 30, will be charged $6. Single back issues, when available, are $1 each.

FROM THE
EDITOR

When I first started being the editor some two months ago, I had great ambitions in expanding the scope of this newsletter. Unfortunately, life does not always follow the directions of our desire. And it is with a heavy heart that I will have to announce my early resignation as the editor of this publication. The reasons are various, and do not have anything to do with club or job itsself. They are more related to new professional demands in my work, and no matter how much I enjoy my hobbies, the demands of the real world out there have to take precedence. As they say, you have got to eat !!!

I will continue to support the future editor with advice (if wanted), and (as I found, more important) with columns. My Forth column will continue, especially now, since it is finally getting into using Forth itsself, and there will be other pieces and program segments. Being the editor can be very enjoyable, and I hope the right person will find the courage to step forth, and do it. Getting that first issue from the printer is very exciting, despite typos...

On another front we find a change in other various officers, most notably, our long-time prez, Dave Flory. There is no question in my mind that he had done more then his share in maintaining our group. All I can write is

THANK YOU.

We have also had more than our share of unfortunate circumstance in starting the bulletin board. Dave has been maintaining it temporarily, but another sysop is to be found. Most people are not really aware of how useful a bulletin board system can be until they have a chance to use it. At first, it appeared somewhat complicated and uncertain to me (and I do have a little programming experience). And I always had this image of hackers chatting garbage to each other just to poke the keys of their beloved machine. But in reality, the system can be put to eminently practical use. As I mentioned in a previous column, most of the articles in these issues not originating from these offices (sounds pompous, doesn't it) are transmitted via phone. And the BBS is often used as a temporary storage fascility, since it is not always possible to coordinate time schedules. The message system is extremely useful. In fact, it is perfect for a clearing house of problem solving. Just leave a message to anybody to help, it usually is not very long, before somebody answers.

Another feature is the capability to up and download. At this point, we only have ATASCII capability (which means that we can transfer LISTED programs in BASIC, ASSEMBLY or PASCAL source etc.), but eventually we will be able to transfer any kind of program. A number of games are presently available, and with enough disk capacity, all the libraries' programs could be transferred via phone, removing a lot of headaches. I have run some experiments with various articles on BBS's, the club could save a lot of money, if our newsletter became electronic. And it would save the editor a significant amount of time! In addition, the club would not be limited to this area, but could be truly national. Quite a number of people call the local BBS's from other states.

What is involved for an individual to get started? Undoubtedly, the most expensive part is the 850 Universal interface selling for around $160 (if you get a good deal). There are modems available for direct serial port connection, but I think that in the end the printer port, and the capability for a total of four RS232C ports is worth the price. A direct connect modem can be had for around $80, as was reported last month. So, if you have a printer, the added expense is relatively small.

Now to a point that always leads to aggravation on my part. I have seen a lot of reviews of commercial software for TERMINAL EMULATORS. For your computer to hook up to a BBS, or the SOURCE or COMPUSERVE, it has to look like a terminal manufactured by ADMIRAL, or DEC etc.. For the ATARI BBS you can also be in another mode that does not translate characters from ATASCII at all, giving you a chance to transmit inverse characters etc.. Anyway, none of the commercial articles mention the excellent software available FOR FREE.

AMISTERM is the program designed to communicate to our AMIS type BBS, JTERM will also do the same. These are available as downloads from the bulletin boards. This, of course, is a catch 22. You cannot download

From The EDITOR contd.

without having the software. But it is also available in our library. These packages permit configuration to most standard terminal requirements, and they permit you to transfer programs to the BBS, or to download them, and transfer them to disk (or cassette). I have not checked with our cassette librarian, whether cassette versions are available. If not, conversion should not be too difficult.

Note that these programs are superior in performance to some other packages you have to pay for, like ATARI's TELELINK, and even TELELINK II, which does not permit disk access.

For those, who have never accessed a bulletin board, the procedure is quite simple:

1. Boot your disk with the AUTORUN.SYS file supllied with your DOS 2.0, it boots the RS232c handler. If you do not have a disk, the handler will boot as long as the 850 interface is turned on before the 800.
2. Either CLOAD, or LOAD "D:AMISTERM", or JTERM, or whatever your TERMINAL EMULATOR. Obviously, the BASIC cartridge must be installed in the system.
3. AMISTERM will select the proper parameters for AMIS BBS' for you, with JTERM you have to select download, ATASCII, full DUPLEX, and no PARITY.
4. Dial up the BBS of your choice, and wait for the carrier beep. Your modem has to be set to ORIGINATE, if it does not do it automaticly.
5. Insert the phone into the cradle (acoustic modem), or switch your direct connect modem on line.
6. On most AMISTERM BBS' you will get the prompt "HIT <RETURN>", this is used to determine, what translation mode you are in. A lot of BBS' require a number of <RETURNS>, so you might have to hit it repeatedly. Some bulletin boards do not respond until they have received the <RETURN> key, so it is common practise to hit it several times, until your terminal is answered.
7. You will then receive a number of sign on bulletins (some systems let you bypass these with CTRL X), then you are asked for your name and address for the log.
8. The remainder is menu oriented, usually a ? or H will give you the help you need.

After using it the first time, hooking up becomes quite easy. It is the communications technique of this age, and I do hope that this group finds the courage to support this powerful capability.

H.E.STRIEPE

SHERLOCK

From the 4TH WORKS

Just received a disk from High Country Microsystems with the Sherlock program from the 4th works on it for evaluation.

Preliminary examination and use indicate that it is a pretty nice disk utility for the average computer user. I don't know if it's worth the $50 price or not. That's for you to decide. It does do everything that's claimed for it, and that's about all you could want to do with a disk.

It will map the disk for you telling you how may sectors contain information, how many are bad and how many contain zeros (formatted but empty). It also lets you dump sectors, edit them disassemble the disk, search the disk for any string of info up to 32 characters long, (sound familiar to any of you FORTH buffs), does a sector copy of any disk, traces sector links, does number conversions, formats the disk, etc.

All in all its a menu driven, user friendly program, which lets you find out more than most will ever want to know about your disks. If you are into FORTH, you may already be able to do all this now. If not this is a really convenient program to use. Any of you local folk who would like to see it demonstrated should come to the next user group meeting and check it out.

DAVE FLORY

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A QUESTION OF RIGHTS

As most of you probably realize, the TELELINK I cartridge will not work with the disk drive. Therefore, you can not upload or download files. Since one must wait for the printer when the buffer is being flushed, your connect charges are higher than they need to be! You also waste your own valuable time waiting for your printer to print out what you have already read on your screen. TELELINK II, announced at the Consumer Electronics Show in Chicago, apparently does not work with a disk either.

First of all, why were they released like that? Secondly, why have they not corrected that error. It is not particularly difficult to do! Several months ago, without benefit of the source code, one of our members successfully modified the TELELINK I code to use the disk drive! Will ATARI give us permission to burn ROMs with the modified code? I doubt it. What do we do? Wait till hell freezes over or bootleg? I have always taken a strong stand against copying any software that would deprive an author (or company) of their rightfull profits. However, if an automobile manufacturer produces a defective car, the consumer generally has the right to return the car for upgrades or at least make the corrections themself.

While it is true that the code in the ROM is copyrightable as a special form of "literary expression", it is also true that its real value lies in its utility, like an automobile. That would suggest to me that at least morally, if not legally, one should have the right to modify and improve on that code to use for their personal benefit.

If ATARI doesn't do something soon, they may find they have lost the opportunity to fill a need. I for one won't shed a tear. I've waited long enough!

Clyde Spencer

FROM THE
SECRETARY

Minutes of August 2, 1982

The first item of business at this meeting was the passage of a resolution regarding a club BBS. Our president, Dave Flory, will install the BBS at his home and act as Sysop. The resolution which was passed by an unanimous show of hands includes approval of expenditure of up to $500 for purchase of an auto answer modem and covering the operating cost of a separate phone line for the BBS. Additional equipment will have to be scrounged or purchased (the status of the club treasury permitting) in the future to allow the BBS to operate at its fullest capability.

Myron Zeissler demonstrated his superb program SpeedRead+ which emulates an tachistoscope. The program is intended to be used as an exercise device in a reading speed improvement program. The product is highly recommended by our leader and even casual viewing of the program in operation is impressive.

Our meetings would not be complete without an appearance by the guru from OSS, Bill Wilkinson. This month he brought us news of a new random access DOS that he is developing for Percom. The new DOS will have lots of nice features including long file names. The downside of the new DOS is that it takes more memory space and will be offered for the Percom double density drive only (at least initially). Miscellaneous Notes

Synapse Software has started up a BBS for File Manager 800 users and "friends". The number of the BBS is (415) 527-8276 and Jon Loveless is the Sysop. The new version of File Manager 800 is due out any day now and I am anxiously waiting to get a copy. I just received a catalog from The Memory Mill which advertises in a number of magazines. The catalog describes

a number of interesting products including memory cards, an alternative O.S. card, and a number of goodies for software pirates. Of most interest to the average club member are the 64K and 128K memory cards. These cards are inserted into the third expansion slot and can be used in conjunction with a 16K and 32K card in the first two slots to give a total of 176K. Software to allow this memory to act like a disk drive is included. Alternatively, it can be used as bank switched ram. Judging from the scant information included in the catalog and a perusal of the O.S. and Hardware manual, the board bank switches memory addresses between $BFFF and $CFFF in 4K units. These addresses are described as being reserved for future O.S. expansion and thus are not being used by Atari for any purpose at the moment. The Memory Mill claims that the boards are compatible with all software which seems a bit farfetched to this cynic. However, the design would seem to be potentially more compatible with certain programs than the Axlon Ramdisk. I will be trying to pry a review copy from the Memory Mill and if successful will report back to you.

Robert K. Kawaratani

PROBLEM HOTLINE

EVENING	CONTACT	PHONE NUMBER	SPECIALTY
MONDAY	ROBIN ZIEGLER	408-438-6879	FORTH and ASSEMBLY
TUESDAY	CHRIS McAFEE	408-258-8442	HARDWARE
WEDNESDAY	JOHN CRANE	408-268-7317	BASIC and FORTH

PLEASE, call only between 7 and 9 p.m.
(R.Ziegler 8 to 10 p.m.)
Note that a number of people have been dropped.
If your are desperate for help, other club officers can be reached for help.

FOR SALE OR TRADE

CARTIDGES:

BASIC	$30
CHESS	$20
STAR RAIDERS	$20
SUP.BREAKOUT	$20

ALSO:

FILE MGR.800	$60
APX COMP. CARD FILE	$ 8

CALL DEAN <408>732-1440

REVIEW

A relatively recent entrant in the contest for the best source of information for the ATARI owner is the magazine ANTIC. It is edited and published by James Capparell, formerly associated with the Bay Area Atari Users Group before he started his own group, Atari Bay Area Computer Users Society in San Francisco.

ANTIC is a slick, professional looking magazine even though Jim is new at this and he has only published 2 issues. The "others" had better watch out! However, the difference between ANTIC and most of the "others" is that ANTIC, subtitled the ATARI Resource, is devoted exclusively to the ATARI 400/800 computers and their associated supplies. Jim has a real knack for finding out things that other people can't. That results in valuable information and tips that you will probably find nowhere else.

The second issue had 52 pages with some color (mostly advertisers). While most of the articles seemed to be aimed at the beginner, there were enough advanced topics and items of interest to a relative "old timer" like myself. The text is clean and virtually devoid of typos, mispellings and other obnoxious errors. It is heavy on advertisements, but I find that a plus since I am interested in what is available for "Colleen". I particularly liked the section called "new Products". It is even (especially) better than INFOWORLD in providing up-to-the-minute information on what is available for the ATARI.

Good luck in your new enterprise Jim, and keep up the good work.

Clyde Spencer

oK Last month we looked at the actual function of the 6502 processor, and how its activities are controlled via machine language programs. At this point, we have to quickly touch on the OPERATING SYSTEM. This is the machine language program in the 10K ROM cartridge in the first slot of the computer. It controlls the actual microsecond to microsecond functioning of your computer. We must also mention the guardian chips. Your trusty 6502 is not alone in its work. In a lot of early machines the central processor was also in charge of taking care of the keyboard and video displays. The ATARI has a number of especially designed chips that handle these and other functions under control of the 6502. Once the 6502 has set up the programs and registers for the other chips, they merrily can go about their business without interrupting the work of the 6502, unless memory access is required (or INTERRUPTS are called, more about those in a futurecolumn). In that case the 6502 is shut down for a second, and the memory directly accessed. This is called DMA (direct memory access), and does happen quite frequently during the generation of the video image.

When your computer is first powered on, all these companion chips have to be set up. Otherwise you would only see garbage on the screen. Input and ouput has to be handled. The memory has to be cleared, disk or 850 interface have to be booted, and the cartridge (if inserted) has to be initialized. During the operation of the system, the timers have to be updated, the joystick ports have to be polled etc., etc., etc.. In fact, the ATARI OS even includes floating point subroutines besides the basic monitor and device drivers (IO handlers). It has an extremely sophisticated interrupt system not found on other machines (well, some machines are starting to imitate the sytem, check into RASTER SCAN INTERRUPTS and SPRITES on the new Commodores). I think it becomes clear that even when you are in BASIC, it is in fact the OS that controlls most of the computer's behavior.

So it is the OS and guardians that distinguish the ATARI form other systems. In fact, if you look at the APPLE reference manual from a machine language programmers point of view, you will be amazed at its relative lack of sophistication in comparison to ATARI. This really makes a difference, especially for the machine language programmer. In reality, most object programs on the ATARI continuously interface with the OS, its like riding piggyback. The object program directs the OS, which must do all the tedious foot work. The capability of the ATARI OS makes machine language programming almost like programming a high level language.

What then are high level languages? High level languages generally translate your high level source program into machine language routines that can be understood by the computer. These languages can create different types of environments, and demand various levels of capabilities. But in general, they communicate on human terms, in words, with more or less complex error checking to prevent system crashes. In BASIC for example, every line is syntax checked after entry. BASIC keeps track of variables, assigns memory allocation without the user being aware of it, and so on. When the source program is 'RUN', it actually directs the BASIC program, which does all of its work through the OS. This translation as you go routine makes it possible to type in a BASIC program, and run it. If it does not work, it can be stopped, or it stops itsself, and corrections can be made on the spot. This interactive scheme makes programming easy, but you pay the price by slow execution. Since the source program is translated or interpreted line by line as they are executed, this type of language is called an interpreted language. Another approach would be to write the source program, and then have a program to translate the source program into a machine language version. This is called compiling. Obviously, compilers do not make interactive programming possible, and because library routines have to be used for standard high level statements (e.g.PRINT, or GOTO), the resulting object program is still not as fast or comapct as one originally written in machine language; but its performance is far superior to the interpreted version.

Forth is actually a hybrid language. It acts in many ways like an interpreter, but it compiles source code (screens) into an inner version, which is between machine language and source language. It then uses a very simple, and thus fast, inner interpreter to execute the code. There is another difference, if you have only used BASIC so far. In BASIC, there are a certain number of keywords available for statements. In Forth every addition to the program becomes a statement, or WORD. Learning Forth is like learning a language, you learn the meaning of words. And wrting in Forth is similar to expanding a language, you create more words.

Well, let us turn on the system, and boot up Forth. The language is totally disk resident, so you must remove any cartridges in your system (the OS would give control to the cartridge rather than Forth). After completion of the boot, the words fig-FORTH 1.4S (or whatever your version) will be legible. At this point you should have booted the compiled version, so that all words are available without loading addtional screens. Note that there are significant differences between the Forths presently available (pns, QS, APEX fig, and fig FORTH 1.4). So, if you have a version different from 1.4S, some aspects of this column might not aplly. I might note here that fig-FORTH 1.4S is public domain, and available through Dave Flory or the disk librarian. The latest version, REV.F has some significant improvements over previous 1.4S versions (especially for people using OS Rev.A).

If you want to find out, what your vocabulary is at any time, type the word VLIST. This word will print out all words presently defined. Wait until the oK prompt is returning; this indicates that the (outer) interpreter is waiting for further input.

When you enter a line, and then hit RETURN, this interpreter will scan the line left to write. It presumes that each word is separated by a space (important to remember). After finding the end of the first word, it will check the vocabulary for this word. If a match has been found, the word will be executed. If none is found, the interpreter will try to interpret the word as a number (remember that in hex the letters A through F are also numbers). If it looks like a number, it is placed on the STACK. If it does not satisfy the number requirements, an error is generated, and the program aborts to the interpreter after clearing the STACK (oK). So each word in the input line is executed in succession. After the last word we return to interpreter.

So far we have been talking about WORDS, but what are they? They first of all have a name (like VLIST), and then they have a body. The body consists of other words that are executed in succession. If the word is a primitive, it has a name and machine code as its body. Primitves and high level words can be freely intermixed.

To define a new word, we use the word ':'. Whenever the interpreter hits :, it starts compiling. At the end of a definition we place ';'. This tells Forth that the job is done. To use one Leo Brodie's apt examples, we could define the word GREET. It would look like this (by the way, lower case words are also acceptable in fig-FORTH 1.4, but they have to be called in lower case, e.g. GREET and greet would be different words; this is different in pns-Forth, which internally translates lower to upper case).

```
: GREET ." Hello there..." CR ;
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The ." is a word like BASIC's PRINT, but remember that the space between the quote and the H of Hello is there for the interpreter, and will not be printed. The " is used to delineate the end of the string. And CR prints a carriage return to the screen. After typing the line, you can hit RETURN. Now, when you type GREET, the computer will execute it, and print "Hello there...", and oK on the next line. You can type GREET GREET on the same line, and Forth will execute it twice. If you do a VLIST, you will see GREET on the top of the list. However, if you are not happy with the word, you can have Forth forget it simply by typing "FORGET GREET". Note, however, that if you had defined any other words after defining GREET, these also would be forgotten. One of the ways to find out how other words are formed is the powerful DECOMP (or short DCP, or ZZ on some versions). Look at VLIST, pick a word, and type DECOMP word (<- your picked word). You will now find the definition of that word. If it is a primitive (like @), the decompiler will indicate thus, and dissemble to equivalent machine code in Forth fashion.

One of the seemingly difficult features of Forth is how it handles numbers. It uses the STACK to pass numbers from word to word, or to temporarily hold or manipulate them. Actually, the use of the STACK is very simple. It simply is a location to put numbers; it works on the principle of first in, last out. Type STACKON, or STON on the newer REV.s. You should see one additional line on the top of the screen, with the label "TOS=" (top of stack) on the left, and fig-FORTH 1.4S on the right.

Well, unfortunately we have to cut this month's column short due to space limitations. Next month we will further elaborate on the stack, and stack manipulation. And finally, we will look at the editor, and the handling of screens.

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. 2 oK
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SEPTEMBER 1982